

Brucellosis

Brucellosis

➤ Introduction :-

❑ Brucellosis :- An old known by various names, including;

✓ Mediterranean fever.

✓ Malta fever.

✓ Gastric remittent fever.

✓ Undulant fever.

❑ Brucellosis :- a zoonotic infection (endemic in animals) caused by the bacterial genus *brucellae*.

❑ *Brucella* organisms are aerobic Gram-negative coccobacilli.

Brucellosis

➤ Introduction :-

❑ The four species causing human disease and their animal hosts are:-

- ✓ *Brucella melitensis* (from goats, sheep and camels, high pathogenicity, causes the most severe disease).
- ✓ *B. abortus* (from cattle, moderate pathogenicity).
- ✓ *B. suis* (from pigs, high pathogenicity , often associated with abscess formation).
- ✓ *B. canis* (from dogs, moderate pathogenicity).

Brucellosis

➤ Mode of transmission :-

- ✓ Transmitted from animals to human by Ingestion infected food products.
 - ✓ Direct contact with an infected animal, through breaks in the skin, mucous membrane, conjunctiva, respiratory, and G.I.T tract.
 - ✓ Inhalation of aerosols, are the most common routes of entry.
- ☐ Incubation period :- 1-3 weeks.

➤ Mode of transmission :-

Major Transmission of Brucellosis



Brucellosis

➤ Pathology :-

- ✓ Brucella that possesses a unique ability to invade both phagocytes and nonphagocytic cells to survive (15-30 %) by finding ways to avoid the immune system.
- ✓ This ability explains why brucellosis is a systemic disease.
- ✓ Localized infection, which occurs in about 30% of patients.
- ✓ In bloodstream, the organisms become intracellular pathogens within (PMNs) and macrophages.

Brucellosis

➤ Pathology :-

- ✓ Survive brucella are transported in to the lymphatic system.
- ✓ Replicate locally or in any systemic organs.
- ✓ Development of cell-mediated immunity is the principle mechanism of recovery.

Brucellosis

➤ Clinical features :-

✓ A careful history is the most helpful tools in the diagnosis of brucellosis.

❖ Symptoms:-

✓ A high intermittent or indolent fever; is the common symptoms and signs.

✓ Rigors; in almost 80% of cases.

✓ Relative bradycardia.

✓ Constitutional symptoms; anorexia, fatigue, weakness, malaise, and weight loss.

Brucellosis

➤ Clinical features :-

❖ Symptoms:-

- ✓ Headache.
- ✓ Joint and muscle pains.
- ✓ Scrotal pain.
- ✓ Occasionally. delirium, abdominal pain and constipation.

Brucellosis

➤ Clinical features :-

❖ Examination :-

❖ The most common finding are :-

- ✓ Hepatosplenomegaly.
- ✓ Enlarged lymph nodes.
- ✓ Fever.
- ✓ Bones tenderness, mostly spine.

Brucellosis

➤ Complications :-

❖ Common complications :-

- ✓ Osteoarticular :- sacroiliitis, arthritis, osteomyelitis, and bursitis,
- ✓ Hepatobiliary :- hepatitis, hepatic abscess, and acute cholecystitis.
- ✓ Genitourinary :- orchitis, and epididymo-orchitis.

Brucellosis

➤ Complications :-

❖ Uncommon complications :-

- ✓ Neurological :- meningitis
- ✓ Cardiology :- endocarditis, myocarditis, and pericarditis.
- ✓ Pulmonary :- pneumonia and pleural effusion.

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➤ **Diagnosis :-**

❖ **Definitive diagnosis depends on History, and culture or serology or both.**

☐ **Cultures:-**

- ✓ **Blood cultures :- are positive in 75–80% of B. melitensis and 50% of B. abortus infections.**
- ✓ **Bone marrow culture is not routine but may increase the diagnostic yield if antibiotics have been used prior to culture.**
- ✓ **CSF culture in neurobrucellosis is positive in about 30% of cases.**

Brucellosis

➤ **Diagnosis :-**

❑ **Serology diagnosis :-**

✓ In endemic areas, a single high antibody titer of more than 1/320 are considered to be more specific for the diagnosis of acute infection.

✓ The test usually takes several weeks to become positive but should eventually detect 95% of acute infections.

❑ **CBC :-** might suggests the diagnosis :- leukopenia, relative lymphocytosis or pancytopenia.

Brucellosis

➤ Management :-

❖ Treatment regimens for different forms of brucellosis :-

❑ Adults with non-localized disease:-

- ✓ Doxycycline 100 mg twice daily orally for 6 weeks plus gentamicin 5 mg/kg IV once daily for 7 days.

or

- ✓ Doxycycline 100 mg twice daily plus rifampicin 600–900 mg orally once daily for 6 weeks.

❑ Bone disease :-

- ✓ Doxycycline 100 mg twice daily plus rifampicin 600–900 mg once daily orally for 6 weeks plus gentamicin 5 mg/kg IV once daily for 7 days.

or

- ✓ Ciprofloxacin 750 mg twice daily orally plus rifampicin 600–900 mg orally once daily for 3 months.

Brucellosis

➤ Management :-

❖ Treatment regimens for different forms of brucellosis :-

❑ Neurobrucellosis :-

- ✓ Doxycycline 100 mg twice daily plus rifampicin 600–900 mg orally once daily for 6 weeks
plus
- ✓ Ceftriaxone 2vg IV twice daily until the cerebrospinal fluid is clear.

❑ Endocarditis :- Almost always needs surgical intervention plus

- ✓ Doxycycline 100 mg twice daily, rifampicin 600–900 mg orally once daily and co-trimoxazole 5 mg/kg of trimethoprim component for 6 months
plus
- ✓ Gentamicin 5 mg/kg IV once daily for 2–4 weeks.

Brucellosis

➤ Management :-

❖ Treatment regimens for different forms of brucellosis :-

❑ Pregnancy :-

- ✓ Rifampicin 600–900 mg orally once daily and co-trimoxazole 5 mg/ kg of trimethoprim component for 4 weeks.
- ✓ **Note :-** Caution in last week of pregnancy due to displacement of bilirubin from albumin by drugs and risk of kernicterus to the fetus.
- ❑ The main roles of surgery in patients with brucellosis in the following :-
 - ✓ Treatment of endocarditis brucellosis.
 - ✓ In the drain of pyogenic joint effusion or paraspinal abscess.

Brucellosis

➤ Prognosis :-

- ❖ Easily curable, with low risk of relapse or chronicity if treated properly within the first few months of onset.
- ❖ Poor prognosis in brucella endocarditis, mortality reach to 85 %.

Thank you